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- (71) Applicant (*for all designated States except US*): AMERSHAM BIOSCIENCES UK LIMITED [GB/GB]; Amersham Place, Little Chalfont, Buckinghamshire HP7 9NA (GB).
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- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): KNOTT, Tim [GB/GB]; Amersham Biosciences UK Limited, The Grove Centre, White Lion Road, Amersham, Buckinghamshire HP7 9LL (GB). SMITH, Clifford [GB/GB]; Amersham Biosciences UK Ltd, The Grove Centre, White Lion Road, Amersham, Buckinghamshire HP7 9LL (GB). PICKERING, Judith [GB/GB]; Amersham Biosciences UK Limited, The Grove Centre, White Lion Road, Amersham, Buckinghamshire HP7 9LL (GB). SCHWARZ, Terek [GB/GB]; Amersham Biosciences UK Limited, The Grove Centre, White Lion Road, Amersham, Buckinghamshire HP7 9LL (GB).
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(54) Title: SUPPRESSION OF NON-SPECIFIC NUCLEIC ACID AMPLIFICATION

(57) Abstract: The invention discloses methods of reducing background signal in nucleic acid amplification reactions by the use of primers in the case of isothermal amplification which include at least one modification selected from a nucleotide analogue, a hairpin loop at the 5' end of the primer, a ribonucleotide or a fluor or quencher. For more general nucleic acid amplification reactions the primer includes at least two of the modifications.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, MEDLINE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 36141 A (HAFNER GREGORY JOHN ;STAFFORD MARK RICHARD (AU); WOLTER LINDSAY CO) 22 June 2000 (2000-06-22) page 1 -page 3 page 9 page 13 -page 18 page 24 -page 28 page 35 page 45 -page 46	1-6
X	WO 98 04746 A (SINAI SCHOOL MEDICINE) 5 February 1998 (1998-02-05) page 10 -page 11 page 17 page 19 -page 31 page 41 page 59 -page 64	1-6
	-/-	

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

BROCHADO GARGANTA, M

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 681 697 A (FULTZ TIMOTHY ET AL) 28 October 1997 (1997-10-28) the whole document	1-6
A	US 5 681 702 A (HORN THOMAS ET AL) 28 October 1997 (1997-10-28) the whole document	1-6

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 02/00144

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0036141	A	22-06-2000	AU 2781900 A WO 0036141 A1 EP 1141417 A1 JP 2002532102 T	03-07-2000 22-06-2000 10-10-2001 02-10-2002
WO 9804746	A	05-02-1998	US 5942391 A EP 0915991 A1 JP 2001514483 T WO 9804746 A1 US 2002182598 A1	24-08-1999 19-05-1999 11-09-2001 05-02-1998 05-12-2002
US 5681697	A	28-10-1997	AU 694468 B2 AU 1303895 A CA 2178598 A1 EP 0731848 A1 HU 74225 A2 JP 9507024 T WO 9516055 A1 US 5635352 A	23-07-1998 27-06-1995 15-06-1995 18-09-1996 28-11-1996 15-07-1997 15-06-1995 03-06-1997
US 5681702	A	28-10-1997	AT 227778 T AU 708194 B2 AU 3463195 A BG 101246 A BR 9508674 A CA 2197901 A1 CZ 9700589 A3 DE 69528839 D1 EP 1097939 A2 EP 0778898 A1 FI 970803 A HU 77754 A2 JP 10506270 T KR 218113 B1 NO 970884 A NZ 292451 A PL 318933 A1 SK 25497 A3 WO 9606950 A1 US 6232462 B1 US 2001026918 A1 US 5780610 A	15-11-2002 29-07-1999 22-03-1996 31-03-1998 18-11-1997 07-03-1996 16-07-1997 19-12-2002 09-05-2001 18-06-1997 23-04-1997 28-07-1998 23-06-1998 01-10-1999 28-04-1997 29-09-1999 21-07-1997 10-12-1997 07-03-1996 15-05-2001 04-10-2001 14-07-1998